CUBIT Capability Proposal

Technical Area Geometry, Meshing, Infrastructure, GUI, Graphics, etc..	**Technical Lead** Cubit Developer in charge of technical area
Infrastructure	Darryl

MRD Description

Describe the capability in terms of how a user would see it.

Provide the ability to define multivariate equations in CUBIT. The equation definitions would be generic. They could be applied to several situations, including variable thickness shells, variable BC distribution factors, mesh sizing, etc.

SRS Description

What needs to be done by Cubit developers to implement this capability? Break the tasks into steps if applicable. (Steps should be on the order of 2 man-weeks or more)

1. Define exactly what we want this to look like (fixed or variable number of inputs or outputs? How do you "call" the equation?)
2. Write an equation parser/creator
3. Write commands to define equations, hooking it up to the equation parser/creator
4. Use equations in one or more appropriate areas of application. I recommend variable distribution factors because a Sandian has asked for it (Fernando Bitsie), and because I'm guessing it will require a representative balance of direct and indirect code changes without requiring *too* much work.

Justification

Describe why this is important and what impact it will have if it is implemented. (or not implemented).

Users have requested variable thickness shells and variable distribution factors. There is currently no way to specify how those values vary. Generic equations may be the best way to meet these needs.

Resources Who will work on this	**Time estimate** How much time will it take in man-weeks	**Targeted Release** 10.2 (August 06), 10.3 (March 2007), 10.4 (August 2007), Future (beyond FY07)
Darryl	Tasks 1-3: 3 weeks	10.2
Karl	Tasks 1, 4: 2 weeks	10.2

Submitted By:	**Date:**
Darryl	3/28/06